1	2	3
12	Kerala	18206
13	Madhya Pradesh	24901
14	Chhattisgarh	9439
15	Maharashtra	55311
16	Manipur	1073
17	Meghalaya	1189
18	Mizoram	376
19	Nagaland	NA
20	Orissa	16552
21	Punjab	30237
22	Rajasthan	34954
23	Sikkim	295
24	Tamil Nadu	24849
25	Tripura	NA
26	Uttar Pradesh	70174
27	Uttarakhand	4365
28	West Bengal	51006
29	A & N Islands	NA
30	Chandigarh	54
31	Delhi	713
32	Puducherry	279
	ALL INDIA	557122

Source: Directorate of Economics & Statistics of respective State Governments, and for All India - Central Statistical Organisation

NA = Not Available

Genetic modification of cash crops

*427. SHRI NAND KUMAR SAI: Will the Minister of AGRICULTURE be pleased to state:

(a) whether Indian Council of Agricultural Research and Department of Bio-technology have recommended various cash crops for developing genetic modifications;

(b) if so, the names of cash crops under review in various institutes as on date, institute-wise;

(c) the criteria fixed for examination of such crops; and

(d) the names of cash crops likely to be released by the Review Committee on Genetic Manipulation and Genetic Engineering Approval Committee in the current financial year?

THE MINISTER OF AGRICULTURE (SHRI SHARAD PAWAR): (a) and (b) The Indian Council of Agricultural Research (ICAR) is conducting research on 18 crops namely rice, wheat, sorghum, maize, chickpea, pigeonpea, soybean, cotton, brassica, banana, papaya, tomato, brinjal, potato, cassava, groundnut, castor and sugarcane which includes cash crops also for genetic modifications. The Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India has also supported research programmes on potato, cotton, sugarcane and banana under nine different projects at different Institutes.

The institute-wise and crop-wise details are given in the Statement *(See* below).

(c) The Government of India has put in place a robust and transparent regulatory mechanisms for examination of Genetically Modified (GM) crops. The Government of India is following a case by case approval of GM crops even if it is approved for commercial cultivation in other countries. The GM crops are monitored and reviewed at all stages of development including research and field trial stage. The development of all GM crops is governed under the 'Rules for the Manufacture, Use, Import and Export and Storage of Hazardous Micro-organisms / Genetically Engineered Organisms or Cells, 1989', issued under the provision of the Environment (Protection) Act, 1986 by Ministry of Environment and Forests. These Rules cover the areas of research as well as activities involving manufacture, use, import, export, storage and large scale applications of Genetically Modified Organisms (GMOs) and products made there from throughout India. The Rules are supported by bio-safety guidelines for evaluating environmental and health safety aspects of genetically modified products.

Rules, 1989 are implemented through Competent Authorities namely:

- Institutional Bio-safety Committee (IBSC) at the institutional level
- Review Committee on Genetic Manipulation (RCGM) under DBT to oversee research and development.
- Genetic Engineering Approval Committee (GEAC) under MoEF is the apex body to grant approval for large scale trials and commercial release of Living Micro Organisms (LMOs)/Hazardous Micro Organisms (HMOs).
- State Biotechnology Coordination Committee (SBCC)/ District Level Committees (DLCs) at the state level responsible for compliance and post release monitoring.

The Genetic Engineering Approval Committee (GEAC) is the apex body under Rules, 1989 for according approval for large scale use and commercial release of GMOs.

(d) With new/modified cry genes Bt. cotton and Bt brinjal have been recommended by the GEAC to release. A few other GM crops *viz.* pigeonpea, banana, rice are in different stages of development and progress is being reviewed by the GEAC.

Statement

Crop-wise and Institutes-wise details

S.No.	Crops	Institutes
1	2	3
1.	Rice	National Research Centre for Plant Biotechnology, New Delhi, Directorate of Rice Research, Hyderabad (Andhra Pradesh), Central Rice Research Institute, Cuttack(Orissa) Indian Council of Agricultural Research-North Eastern Hill Complex, Shillong, Meghalaya, Vivekananda Parvatiya Krishi Anusandhanshala, Almora (Uttrakhand), MS Swaminathan Research Foundation, Chennai, University of Calcutta Bose Institute, Calcutta
2.	Wheat	National Research Centre on Plant Biotechnology, New Delhi
3.	Sorghum	Directorate of Sorghum Research, Hyderabad (Andhra Pradesh), National Research Centre for Plant Biotechnology, New Delhi
4.	Maize	Vivekananda Parvatiya Krishi Anusandhanshala, Almora (Uttrakhand), Indian Agricultural Research Institute, New Delhi Directorate of Maize Research, New Delhi, National Research Centre for Plant Biotechnology, New Delhi.
5.	Chickpea	National Research Centre for Plant Biotechnology, New Delhi. Indian Institute of Pulses Research, Kanpur(Uttar Pradesh) Assam Agricultural University, Jorhat
6.	Pigeonpea	National Research Centre for Plant Biotechnology, New Delhi, Indian Institute of Pulses Research, Kanpur (Uttar Pradesh)
7.	Soybean	Indian Agricultural Research Institute, New Delhi. Directorate of Soybean Research, Indore (Madhya Pradesh)
8.	Cotton	Central Institute for Cotton Research, Nagpur(Maharashtra) National Research Centre for Plant Biotechnology, New Delhi, Indian Agricultural Research Institute, New Delhi. University of Delhi, South Campus, New Delhi
9.	Brassica	National Research Centre for Plant Biotechnology, New Delhi. Directorate of Rapeseed & Mustard Research, Bharatpur(Rajasthan)

1	2	3
10.	Banana	National Research Centre for Plant Biotechnology, New Delhi Indian, Agricultural Research Institute, New Delhi. Indian Institute of Horticultural Research, Bangalore (Karnataka), Tamil Nadu Agricultural University, Coimbatore (Tamil Nadu)
11.	Papaya	Central Institute of Sub-tropical Horticulture, Lucknow (Uttar Pradesh), Indian Agricultural Research Institute, New Delhi.
12.	Tomato	Indian Institute of Vegetable Research, Varanasi (Uttar Pradesh), Indian Institute of Horticultural Research, Bangalore(Karnataka), Indian Agricultural Research Institute, New Delhi, National Research Centre for Plant Biotechnology, New Delhi.
13.	Brinjal	Indian Institute of Vegetable Research, Varanasi.(Uttar Pradesh), National Research Centre for Plant Biotechnology, New Delhi. Tamil Nadu Agricultural University, Coimbatore University of Agricultural Science, Dharwad
14.	Potato	Central Potato Research Institute, Shimla (Himachal Pradesh), Indian Agricultural Research Institute, New Delhi.
15.	Cassava	Central Tuber Crops Research Institute, Thiruvanantha-puram (Kerala), Indian Agricultural Research Institute, New Delhi.
16.	Groundnut	Directorate of Groundnut Research, Junagadh (Gujrat) National Research Centre for Plant Biotechnology, New Delhi, Directorate of Oilseed Research, Hyderabad(Andraha Pradesh), National Research Centre for Plant Biotechnology, New Delhi.
17.	Castor	Directorate of Oilseed Research, Hyderabad (Andhra Pradesh), National Research Centre for Plant Biotechnology, New Delhi
18.	Sugarcane	Sugarcane Breeding Institute, Coimbatore, Tamil Nadu Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu

Setting up of an independent regulator for railways

*429. SHRI KALRAJ MISHRA:

SHRI SANTOSH BAGRODIA:

Will the Minister of RAILWAYS be pleased to state:

(a) whether Planning Commission in its mid-term appraisal has recommended for setting up of an independent regulator for Railways;